

AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims, which replace all previous versions and listings of the claims.

I CLAIM:

1. A system for assisting a pilot flying an aircraft having solid state gyros and a turn coordinator gyro on-board, comprising:

means on-board the aircraft for obtaining a continuous determination of the aircraft's altitude from satellite-based radio navigation signals;

means on-board the aircraft for obtaining a continuous determination of the aircraft's attitude from satellite-based radio navigation signals and from said solid state gyros on-board the aircraft;

means on-board the aircraft for determining the roll rate of the aircraft from satellite-based radio navigation signals and from said solid state gyros and said turn coordinator gyro on-board the aircraft;

data processing means on-board the aircraft for processing said altitude, attitude and roll rate determinations;

and means on-board the aircraft responsive to said data processing means for providing corrective voice messages to the pilot.

2. A system according to claim 1, wherein said data processing means includes means for detecting the magnitude and direction of any excessive altitude excursion of the aircraft in a predetermined time interval, and means for detecting any excessive roll rate of the aircraft;

and said means for providing corrective voice messages to the pilot produces a first series of corrective voice messages when the aircraft has both an excessive roll rate and an excessive altitude excursion downward, and a second series of corrective voice messages, different from the first, when the aircraft has both an excessive roll rate and an excessive altitude excursion upward.

a safe altitude/approach database for the terrain over which the aircraft is flying;
means for comparing said continuous altitude determination against said
database to initiate a voice warning to the pilot when the aircraft is at an unsafe altitude.

6. A system according to claim 5, and further comprising: means for disabling the comparison of said continuous altitude determination against said database when the aircraft is within a predetermined approach distance to an airport.

7. A system according to claim 2, wherein said first series of messages is initiated when the aircraft is nose-low and instructs the pilot: first, to reduce the aircraft engine power; next, to level the wings; and, after that, to raise the aircraft nose and increase engine power to establish a climb.

8. A system according to claim 2, wherein said second series of messages is initiated when the aircraft is nose-high and instructs the pilot: first, to increase the aircraft engine air power; next, to lower the aircraft nose; and, after that, to level the wings.

9. A system according to claim 2, wherein:

said first series of messages is initiated when the aircraft is nose-low and instructs the pilot: first, to reduce the aircraft engine power; next, to level the wings; and, after that, to raise the aircraft nose and increase engine power to establish a climb;